

1. PRODUCT AND COMPANY IDENTIFICATION

Commercial name: **PROMOX P200**
Chemical name: Methyl ethyl ketone peroxide

Intended use: Industrial – Polymerization of unsaturated polyester resins.

Manufacturer/Supplier: PROMOX SRL Via A. Diaz, 22/a 21038 Leggiano (VA)
tel. +39/ 0332/ 648380 fax +39/0332/ 648105 e-mail info@promoxide.com

Emergency telephone: In the case of any accidental contact, call:
"CENTRO ANTI-VELENI" di MILANO
PROMOX SRL
TEL. +39/02/66101029
TEL. +39/0332/648380

2. COMPOSITION/INFORMATION ON THE COMPONENT

METHYL ETHYL KETONE PEROXIDE				30 - 50% w/w			
CAS N.	1338-23-4	UN N.	3105	EINECS	215-661-2	Index n°	n.d.
Symbol(s) : C, Corrosive; E, Explosive				Risk-phrase(s): R2, R7, R22, R34			

DIISOBUTYL PHTHALATE				30 - 50% w/w			
CAS N.	84-69-5	UN N.	3082	EINECS (CE)	201-553-2	Index n°	n.d.
Symbol(s) :				Risk-phrase(s): No dangerous			

DIACETONE ALCOHOL				10 - 20% w/w			
CAS N.	123-42-2	UN N.	1148	EINECS (CE)	204-626-7	Index n°	603-016-00-1
Symbol(s) : Xi, Irritant				Risk-phrase(s): R36			

METHYL ETHYL KETONE				01 - 05% w/w			
CAS N.	78-93-3	UN N.	1193	EINECS (CE)	201-159-0	Index n°	606-002-00-3
Symbol(s) : F, Highly flammable; Xi, Irritant				Risk-phrase(s): R 11, R36, R66, R67			

HYDROGEN PEROXIDE				01 - 05% w/w			
CAS N.	7722-84-1	UN N.	2015	EINECS (CE)	231-765-0	Index n°	008-003-00-9
Symbol(s) : C, Corrosive; O, Oxidizing				Risk-phrase(s): R5, R8, R20/22, R35			

3. PRODUCT HAZARD IDENTIFICATION

Hazard symbols: O Oxidizing; C Corrosive

Risk-phrases: R7, R22, R34 For other information see section 15.

Principal risk: It may cause fire. Harmful if swallowed. Causes burns.

Health effects - eye: Contact with eyes causes injury to the cornea and eyelids.

Health effects - skin: Contact with skin causes burns.

Health effects – ingestion: Swallowing causes corrosion to oral cavity, pharynx and to alimentary canal.

Health effects – inhalation: Reduced inhalation risk.

Environmental effects: n.d.

4. FIRST AID MEASURES

First aid – eyes: Wash immediately with plenty of running keeping the eyelid always far from the eye. Immediately take the injured person to an oculist. Do not treat injured eyes with any ointments or oils.

First aid - skin: Remove the accidentally contaminated clothes immediately, wash any affected skin area with plenty of lukewarm water and soap. Should there be persistent skin reddening or irritation, take the injured person to the nearest first-aid post for burns treatment.

First aid - ingestion: Do not induce vomiting. Rinse mouth with water and immediately take him to the nearest first-aid post.

First aid - inhalation

Take the injured person away from the contaminated area. If the injured person shows any signs of breathing-insufficiency, give artificial respiration by means of a self-expanding balloon mask (AMBU). Immediately take the injured person to the nearest first-aid post.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Always use water as an extinguisher, preferably broken up, keeping windward and at a safe distance. Cool down both the containers which have been involved in the fire and the surrounding area. Do not start cleaning the area or salvaging the goods before the whole area has completely cooled down. In case of product decomposition, this is detectable by the formation of fumes and by containers overheating, cools down with water.

Unsuitable extinguishing media

Halones.

Special hazards

The fire can resume if it does not cool it.
Decomposition may occur under effect of heating.
The oxygen developed during the decomposition phase may support the combustion.

Protective equipment

Wear suitable protective clothing. Wear self contained breathing apparatus, see section 8.

Other information

Extinguish a small fire with powder or carbon dioxide then apply water to prevent re-ignition.
Cool closed containers with water.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Eliminate the ignition sources. Do not breathe fumes/vapour. Avoid contact with skin and eyes.
During the operation use the individual protective devices, see section 8.

Environmental precautions

Do not allow to enter drains or water courses. Cover the remainder with inert absorbent (e.g. vermiculite) for disposal. Advise competent authority.

Methods for cleaning up

Collect as much as possible in a clean container for (preferable) reuse or disposal.
Never try to recover the discharged product, or reintroduce it into its original containers.
After the pick up of the product, clean the affected area with water, avoiding excessive waste dispersion and neutralize with soda or lime.

7. HANDLING AND STORAGE

Handling

During the operation use the individual protective devices. see section 8.
Do not allow operators to use naked flames, to produce sparks or to smoke inside the rooms where the product is handled and stored.
Do not breathe fumes/vapours.
Do not compound/pollute with other substance which can cause decomposition.
The containers used to collect and pour out the product are to be kept scrupulously clean, avoiding peroxide refilling into its original container.

Storage

Keep the product:
-in observance with the local rules;
-in the original closed containers;
-away from sources of ignition (steam lines, naked flames, sparks, direct sunlight, etc.);
-away from other inflammable materials.

In order to keep the product characteristics unaltered for a long time, store in a cool, well-ventilated position.

Other information

The materials which can bear the contact with peroxides, and which are consequently suitable for the construction of peroxides containers, dispensers, etc., are: glass or ceramic, polyethylene, AISI 304 or 316 stainless steel, pickled and passivated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Limit value for exposure to single components of the product.**

METHYL ETHYL KETONE PEROXIDE	ACGIH	-	TLV-STEL / C	mg/m3	0.15
DIISOBUTYL PHTHALATE	ACGIH	-	TLV-TWA	mg/m3	-
DIACETONE ALCOHOL	ACGIH	-	TLV-TWA	mg/m3	238
METHYL ETHYL KETONE	Dir.	2000/39/CE		mg/m3 (8 hours)	600
HYDROGEN PEROXIDE	ACGIH	-	TLV-TWA	mg/m3	1.4

Exposure controls and personal protection device.

The personal protection devices vary according to possible exposure and danger of the work conditions.

Engineering controls	The working area shall be provided with suitable ventilation system in order to keep the product concentration rate in the air at a low level.
Respiratory protection	In case of emergency wear suitable respiratory equipment (respirator with filter A).
Hand protection	Wear suitable protective gloves of neoprene or synthetic rubber.
Eye protection	Wear eye/face protection during pouring.
Skin protection	When high shoot out risks occur, rubber booths and waterproof clothes must be worn.

9. PHYSICAL AND CHEMICAL PROPERTIES
General information

<i>Characteristic</i>	<i>Unit of measure</i>	<i>Declared value</i>
Appearance	-	Liquid, clear
Colour	-	Colourless
Odour	-	Distinctive

Important information about human health and environmental safety

<i>Characteristic</i>	<i>Unit of measure</i>	<i>Declared value</i>
pH (in aqueous solution)	-	Acid
Boiling point/ interval	°C	100°C decomposes
Flash point (open cup)	°C	> SADT value
Flash point (closed cup)	°C	Not applicable
Flammability ASTM D-4206-96(2001)	-	Not support the combustion
Explosive properties	-	No
Oxidizing properties	-	Not applicable
Vapour pressure	-	Not determined
Relative density UNI EN ISO 12185-00	d 20/20	1,060
Solubility in water	-	Partly soluble
Liposolubility	-	Soluble in polar solvents
Partition coefficient	-	Not determined
Viscosity at 20 °C ISO UNI EN 3104	mPa.s	18
Steam density	air=1	>1
Evaporation velocity	-	Not determined

Other information

<i>Characteristic</i>	<i>Unit of measure</i>	<i>Declared value</i>
Auto ignition	°C	Not determined
Melting point/ interval	°C	< - 10
SADT (Self Accelerated Decomposition Temperature)	°C	> 60
Active oxygen content	%	9,1
Solubility in other solvents	-	See section 10

10. STABILITY AND REACTIVITY

Stability	The product is stable under normal storage conditions. Product decomposition is detected by temperature increase and fumes emission. The oxygen developed during the decomposition phase, in case of fire may support the combustion of flammable products.
Conditions to avoid	It can rapidly decompose if heated or mixed with other incompatible chemical compounds. It is therefore necessary to avoid the product coming into contact with all kinds of metallic salts; acids and alkalis, especially if in a concentrated form; any reducers and all organic and flammable compounds. Store in a well ventilated place away from sources of heat and direct sunlight.
Material to avoid	To use only compatible materials, see section 7.
Decomposition products	The main products of the decomposition process are: oxygen, carbon dioxide, water, acetic acid, Methyleneethylketone.

11. TOXICOLOGICAL INFORMATION

The experimental product toxicity data reported by specific literature, are as follows:

METHYL ETHYL KETONE PEROXIDE (35% solution in Dimethyl phthalate)

Acute toxicity - Oral	LD50 oral - (lethal dose rat)	484 mg/Kg
Acute toxicity - Inhalation	LC50 (lethal concentration rat)	170 ppm/4h
Acute toxicity - Dermal	LD50 (lethal dose rat)	1017 mg/Kg
Eye irritation	(rabbit)	Extremely irritant/ corrosive
Skin irritation	(rabbit)	Corrosive
Genotoxicity "in vitro" (Ames test)		Negative
Skin sensitization		n.d.

DIISOBUTYL PHTHALATE

Acute toxicity - Oral	LD50 (rat)	>10.000 mg/Kg
Acute toxicity - Inhalation	LC50 (rat)	> 6h in saturated space
Acute toxicity - Dermal	LD50 (guinea pig)	10400 mg/kg
Eye irritation	(rabbit)	Not irritant
Skin irritation	(rabbit)	Not irritant
Genotoxicity "in vitro" (Ames test)		Negative
Skin sensitization		n.d.

DIACETONE ALCOHOL

Acute toxicity - Oral	LD50 oral - (lethal dose rat)	> 4000 mg/Kg
Acute toxicity - Inhalation	LC50 (lethal concentration rat)	1500 ppm/8h
Acute toxicity - Dermal	LD50 dermal - (lethal dose rat)	> 2000 mg/Kg
Eye irritation	(rabbit)	irritant
Skin irritation	(rabbit)	Moderately irritant
Genotoxicity "in vitro" (Ames test)		Negative
Skin sensitization		Not sensitizing

METHYL ETHYL KETONE

Acute toxicity - Oral	LD50 (rat)	> 2500 mg/Kg
Acute toxicity - Inhalation	LC50 (rat)	> 5000 ppm/6h
Acute toxicity - Dermal	LD50 (rabbit)	> 6000 mg/Kg
Eye irritation	(rabbit)	irritant
Skin irritation	(rabbit)	Moderately irritant
Genotoxicity "in vitro" (Ames test)	(tryphimurium salmonella)	Negative
Skin sensitization	(guinea pig)	Not sensitizing

HYDROGEN PEROXIDE 35% solution

Acute toxicity - Oral	LD50 oral - (lethal dose rat)	1232 mg/Kg
Acute toxicity - Inhalation	LC50 (lethal concentration rat)	2 mg/l/4h (100%)
Acute toxicity - Dermal	LD50 (lethal dose rat)	> 2000 mg/Kg
Eye irritation	(rabbit)	Extremely irritant
Skin irritation	(rabbit)	Irritant
Genotoxicity "in vitro" (Ames test)		Positive
Genotoxicity "in vivo"		Negative
Skin sensitization		Not sensitizing

12. ECOLOGICAL INFORMATION

Use this product appropriately and avoid product dispersion in the environment.

The available ecotoxicity data about single components of the preparation, are as follows:

METHYL ETHYL KETONE PEROXIDE (35% solution in Dimethyl phthalate)

Acute toxicity EC50 bacteria	48 mg/l
Acute toxicity EC50 crustaceans (daphnia magna 24h)	n.d.
Acute toxicity LC50 fish (poecilia reticulata 96h)	44.2 mg/l
Mobility	Air - poorly volatile Water - partly soluble in water Soil - possible absorption
Persistence and degradation	Easily biodegradable
Bioaccumulation potential (log pow)	Little bioaccumulable – log Pow=2

DIISOBUTYL PHTHALATE

Acute toxicity EC50 protozoo (tetrahymena piriformis)	50 ug/ml growth inhibition
Acute toxicity EC50 crustaceans (daphnia magna 24h)	7.4 mg/l
Acute toxicity LC50 fish (leuciscus idus 48h)	4.2 mg/l
Mobility	Air - little volatile Water - insoluble in water, evaporate with difficulty

Persistence and degradation
Bioaccumulation potential

Soil - possible strong absorption – Koc = 4100
Easily biodegradable
Potentially bioaccumulable – log Pow= >4 - BCF<100

DIACETONE ALCOHOL

Acute toxicity EC3 bacteria (pseudomonas putida 16h):
Acute toxicity EC50 crustaceans (daphnia magna 24h)
Acute toxicity LC50 fish (leuciscus idus 48h)
Mobility

825 mg/l
9000 mg/l
8930 mg/l
Air - little volatile
Water - soluble in water, partially evaporate
Soil - little probable absorption – Koc = n.d.
Easily biodegradable
Not bioaccumulable – low Pow=1

Persistence and degradation
Bioaccumulation potential

METHYL ETHYL KETONE

Acute toxicity EC3 bacteria (pseudomonas putida 16h)
Acute toxicity EC50 crustaceans (daphnia magna 48h)
Acute toxicity LC50 fish (pimephales promelas 96h)
Mobility

1150 mg/l
>520 mg/l
3220 mg/l
Air - very volatile
Water - partly soluble in water, easily evaporate
Soil - little probable absorption – Koc = 5.2
Rapidly biodegradable
Not bioaccumulable – low Pow= < 1

Persistence and degradation
Bioaccumulation potential

HYDROGEN PEROXIDE

Acute toxicity EC10 bacteria (pseudomonas putida 16h)
Acute toxicity EC50 crustaceans (daphnia magna 24h)
Acute toxicity LC50 fish (pimephales promelas 96h)
Mobility

11 mg/l
7.7 mg/l
16.4 mg/l
Air - little volatile
Water - soluble in water, unlikely evaporate
Soil - not significant absorption – decomposes
Rapidly biodegradable
Not bioaccumulable – log Pow= n.d.

Persistence and degradation
Bioaccumulation potential

13. DISPOSAL CONSIDERATIONS

For safety measures about handling of excess and residuals see section 7 and 8.

It is advisable to dispose the product and the packaging in strict observance with the local rules.

Product

It is advisable to dispose of the product by combustion in authorized structure. Before starting the combustion procedure, it is recommended to dilute the peroxide with adequate plasticizers. If the product is correctly ignite, it decomposes itself in carbon dioxide and water.

Contaminated packaging

Before the packaging is disposed of, it must be purified with water and the effluents must be treated as refuse.

14. TRANSPORT INFORMATION

UN NUMBER:

UN 3105 AIR TRANSPORT – I.A.T.A./I.C.A.O.

PACKING GROUP:

II Class 5.2
Labelling 5.2
Auxiliary risk ---

LAND TRANSPORT - ADR / RID

SEA TRANSPORT – I.M.D.G. Code

UN 3105, Organic Peroxide type D, liquid

Class 5.2

(METHYL ETHYL KETONE PEROXIDE) 5.2,P.G. II ADR

EmS (packing) F-J, S-R

Class

5.2, II Labelling 5.2

Labelling

5.2 Auxiliary risk ---

TREM-Card

CEFIC TEC(R)- 52GP1-L Marine pollutant no

15. REGULATORY INFORMATION

Information on labelling:

Commercial name	see section 1
Responsible for intake on market of the UE	see section 1
Chemical name of the preparation and the contained substances	see section 1 e 2

Classification carried out according to the Decree Ministerial 28 February 2006 (29° adaptation of the Directive 67/548/CEE).

Warning symbols: O Oxidizing; C Corrosive;

R(isk) phrase(s)

R7: May cause fire. R22: Harmful if swallowed. R34: Causes burns.

S(afety) phrase(s)

S3/7: Keep container tightly closed in a cool place. S14: Keep away from reducing agents, alkali and compounds with heavy metal bases (e.g. accelerators). S16: Keep away from sources of ignitions. No smoking. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S45: In case of accident or if you feel unwell, seek medical advice immediately (Show the label where possible). S50: Do not mix with accelerating agents or promoters.

Nominal quantitative of the contents: the product is marketed in packing till 25 Kg. capacities.

Disposal national pertinent:**Legislative Decree 334/99**

Unless local restriction the product is submitted to the requirements for storage facilities above 50 tons

D.Lg.vo 626/94

Art. 72 decies - Sanitary Controls are obligatory periodically when the risk is not moderated for chemical agents which are dangerous for the health and when they answer to the criteria for the classification like: - toxic, much toxic. - Injurious, - sensibilising, - irritant. The biological monitoring is obligatory when the workers are exposed to agents for which a value for biological limit has been fixed.

16. OTHER CONSIDERATIONS

METHYL ETHYL KETONE PEROXIDE

R2	Risk of explosion by shock, friction, fire or other sources of ignition
R7	May cause fire
R22	Harmful if swallowed
R34	Causes burns

DIACETONE ALCOHOL

R36	Irritating to eyes
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DIISOBUTYL PHTHALATE

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METHYL ETHYL KETONE

R11	Highly flammable
R36	Irritating to eyes
R66	Repeated exposure may cause skin dryness or cracking
R67	Vapours may cause drowsiness and dizziness

HYDROGEN PEROXIDE

R5	Heating may cause an explosion
R8	Contact with combustible material may cause fire
R20/22	Harmful if swallowed, in contact with skin and if swallowed
R35	Causes severe burns

This card has been written the 28.04.2006 on the base of how much decided from the D.M.28.01.1992 (Directive the EEC 91/155, modified from Directive the EEC 93/112), D.Lgs n. 52 of the 03.02.1997, D.M.04.04.1997, D.M.28.04.1997, D.M. 07.09.2002, D.Lgs.n.65 of the 14.03.2003. Bibliographical references: Given IUCLID set; NIOSH, The Registry of Toxic Effects

Product inserted near the Archives Prepares for Dangerous product of the Advanced Institute of Health (ISS) with the code: P200

All suggestions included in this safety information card are the summary of the most reliable data available at the moment. It is however impossible to guarantee that these instructions are sufficient and/or valid for any application, some data are still in review. They are informative, they do not represent some guarantee of the characteristics of the product and they do not motivate any contractual legal relationship. The directory of the law witnesses and regulations does not have to be considered like exhausting.

For any further information, users may directly contact the Promox Technical Service.

Bibliographic references: IUCLID Data set; NIOSH, the registry of toxic effects.

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